

PSEUDO ANEURYSM COMPLICATES PANCREATIC PSEUDO CYST: IMPORTANCE OF EARLY DETECTION AND MANAGEMENT

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ABSTRACT A 70-year old woman presented to emergency department with epigastric abdominal pain, hematemesis and jaundice. Resuscitation and admission to ICU was done. Upon abdominal ultrasound, upper endoscopy, dynamic CT scan, a diagnosis of chronic pancreatitis with pseudo cyst invading splenic artery forming pseudo aneurysm, made. Trans-arterial embolization of splenic artery was done that resulted in arrest of bleeding and spontaneous regression of the pseudo cyst thus saving the patient's life.

Key words Pancreatic pseudocyst, Chronic pancreatitis, Pseudo aneurysm, Splenic artery angiography, Gastrointestinal bleeding.

INTRODUCTION:

Pancreatic pseudo cysts develop in 5% to 15% of cases of acute pancreatitis and in 20% to 40% of cases of chronic pancreatitis.¹ Acute hemorrhage from pancreatic pseudo cysts and ruptured pseudo aneurysms is the most rapidly fatal complication of pancreatitis. The natural history of pseudo aneurysm complicating chronic pancreatitis is unknown. Severe bleeding is seen if the hemorrhagic pseudo cyst ruptures into the gastrointestinal tract, peritoneal cavity, retro peritoneum or pancreatic duct. Among them, the gastrointestinal tract is the most frequently affected.²

The transformation of a pseudo cyst into a vascular structure (a pancreatic pseudo aneurysm) is explained by two mechanisms: the auto digestion of the vascular system due to the action of the pancreatic enzymes or a large pseudo cyst that erodes a visceral artery.³ Because of its proximity to pancreas the splenic artery is the most commonly affected vessel, but bleeding may occur from other vessels including the gastro duodenal artery, gastric artery and hepatic artery.⁴ We report the management of one such case at our facility.

CASE REPORT:

A 70-year old woman presented in the emergency department for severe epigastric abdominal pain and hematemesis of two hours duration. She had history of chronic upper abdominal pain radiating to the back for the last eight months. The pain was progressive in severity, with unknown aggravating or relieving factors. Patient had associated nausea, vomiting and significant weight loss.

Clinical examination showed a pale, jaundiced, cachectic patient with pulse rate of 110 and blood pressure 100/60 mmHg. A mass was felt in the epigastric region, with mild tenderness and audible bruit over it. Laboratory findings indicated low hemoglobin of 8.7 g/dl, high thrombocytes 490,000, and high total bilirubin 2.8 mg %. Other liver function tests, serum amylase, serum lipase were within normal range. Resuscitation and admission to intensive care unit was done.

Upper endoscopy showed gastric fundal sub mucosal mass with suspicion of leiomyoma and blood coming out from ampulla. Barium meal showed sub mucosal mass in the fundus of stomach (Figure 1).

Tran abdominal ultrasound showed distended gallbladder with multiple stones and cystic mass in the tail of pancreas. Computed tomography showed evidence of low attenuation lesion of cystic component located at tail of pancreas invading the posterior wall of the stomach. Features were in keeping with huge pancreatic pseudo cyst. (Figure 2A, 2B).

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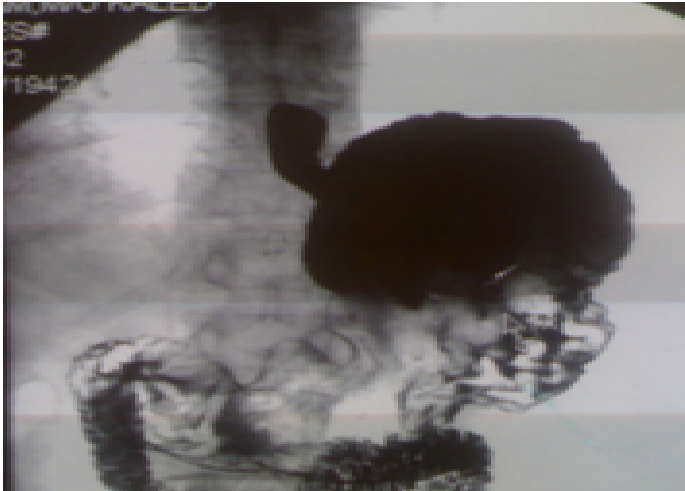


Figure 1: Barium meal showed sub mucosal mass in the fundus of stomach.

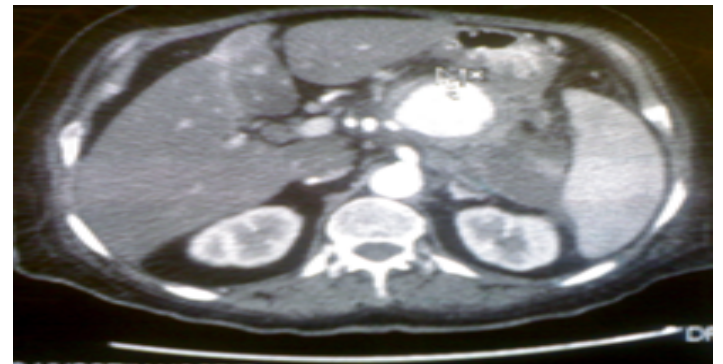
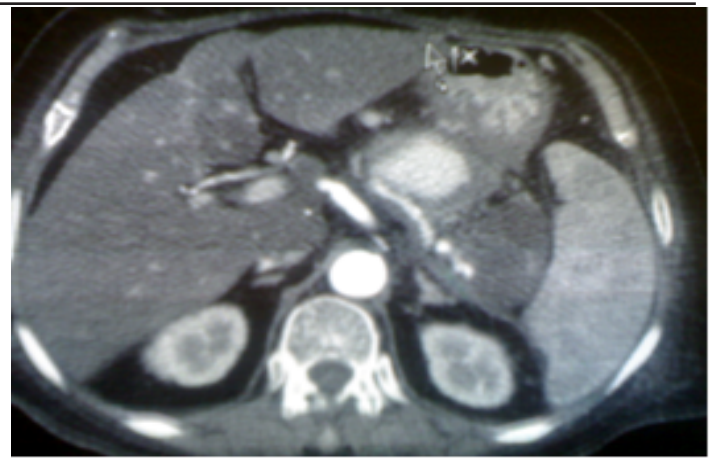


Figure 3A, 3B: Pancreatic pseudo cyst with splenic artery pseudo aneurysm.

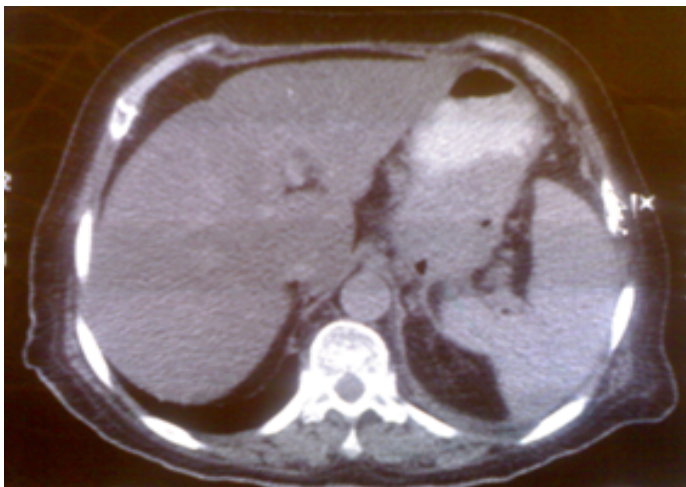
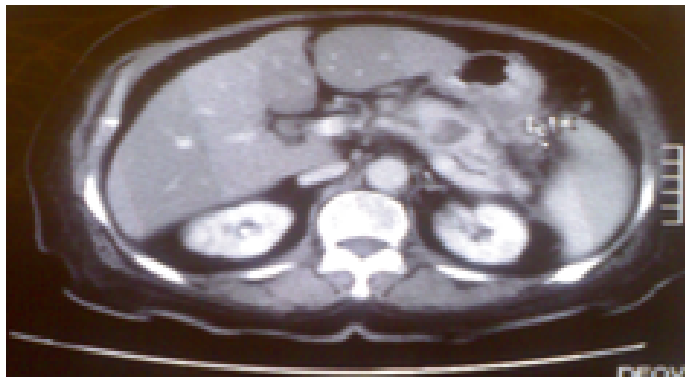


Figure 2A, 2B: low attenuation lesion of cystic component located at tail of pancreas invading the posterior wall of the stomach.

Dynamic computed tomography showed that pancreatic pseudo cyst invaded the splenic artery with formation of pseudo aneurysm which opened directly to the main main pancreatic duct. (Figure 3A, 3B).

Both options of treatment were discussed surgery versus interventional radiology with the possible risks for each with the patient family. Angiography was performed through puncture in right groin using 6 French system. Findings was large pseudo aneurysm arising from splenic artery. A 4x16 mm stent graft was placed across the origin of pseudo cyst with subsequent images showing filling of the aneurysm. (figure 4A, 4B, 4C).

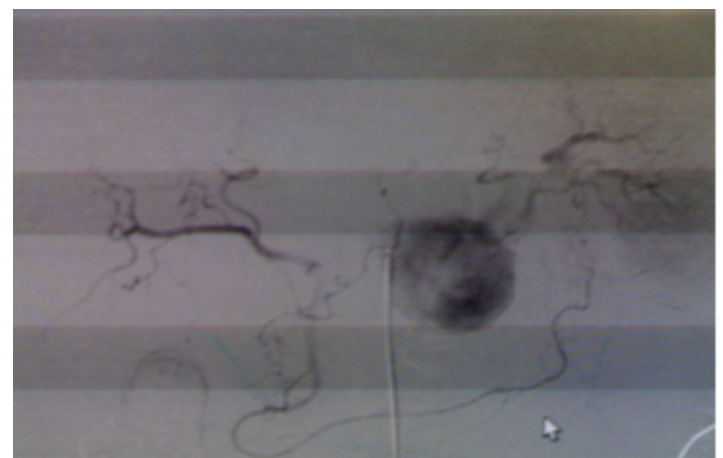


Fig: 4A

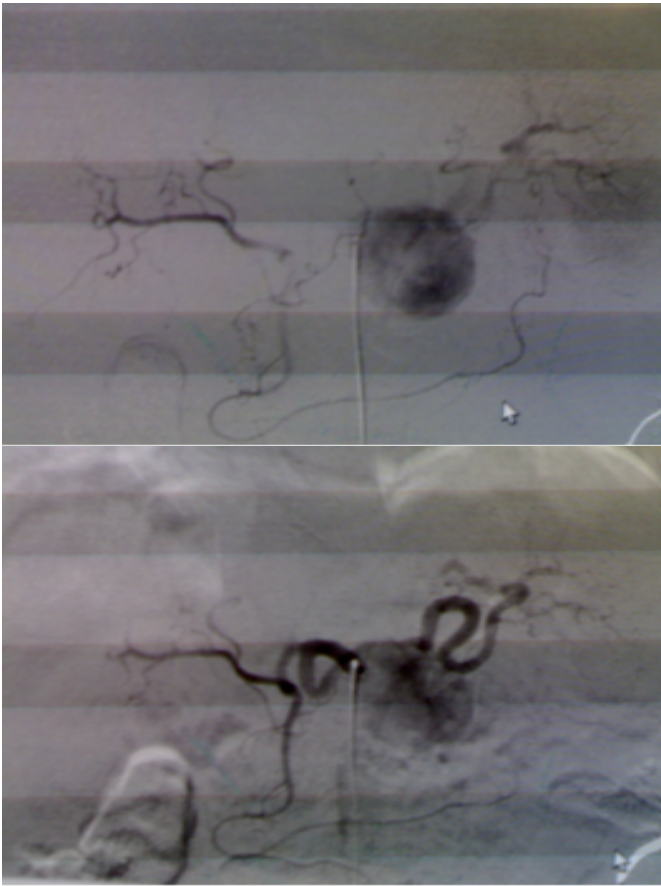


Figure 4A, 4B, 4C: Large pseudo aneurysm arising from splenic artery, subsequent images showing filling of the aneurysm.

The splenic artery was embolized using 4x8, 5x10 micro coils, images after that showed successful full embolization of splenic artery with no more filling of the pseudo aneurysm. (Figure 5A, 5B, 5C, 5D).

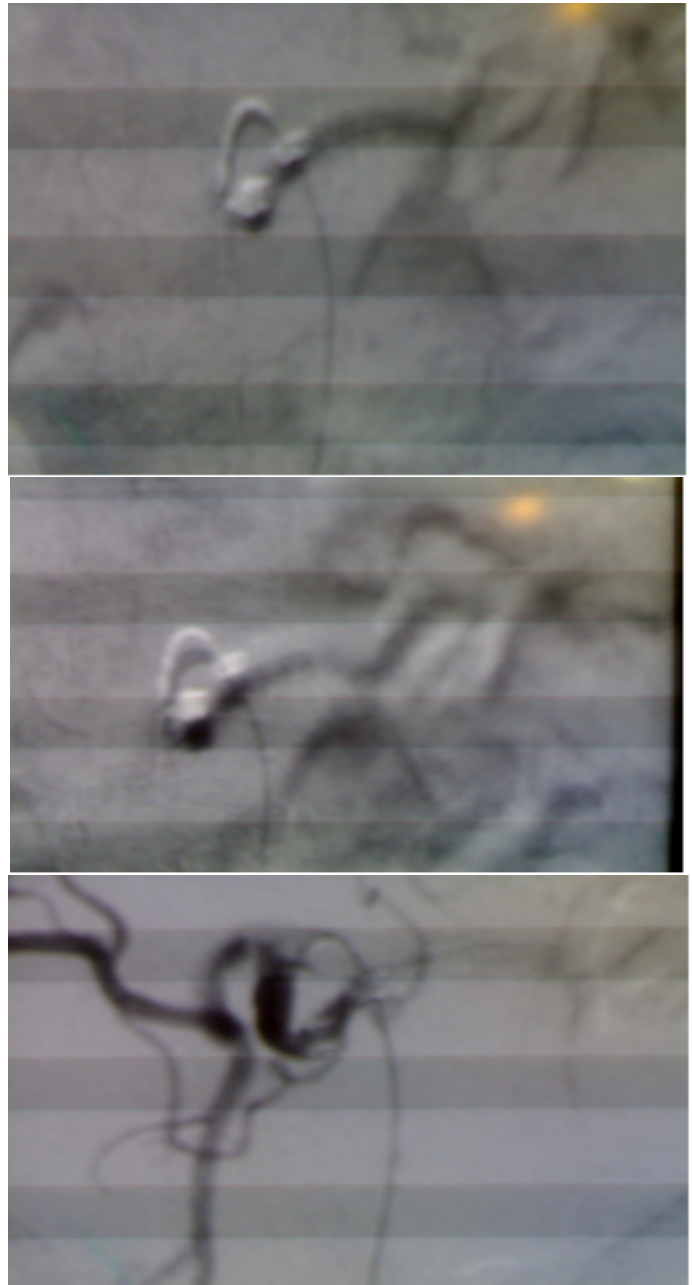
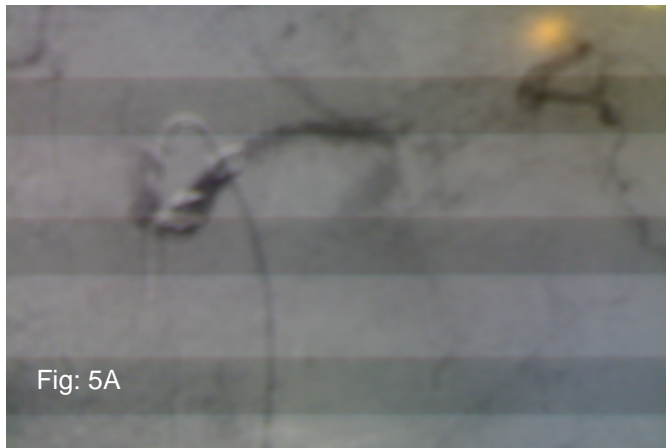


Figure 5A, 5B, 5C, 5D: the successful full embolization of splenic artery with no more filling of the pseudo aneurysm, using micro coils.

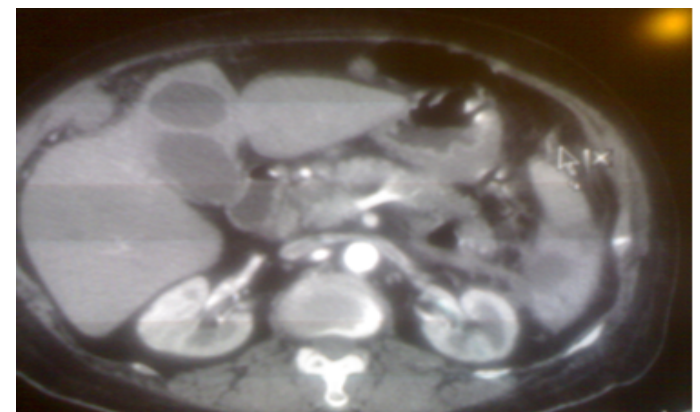


Figure 6: complete regression of the pseudo cyst.

Upper gastrointestinal bleeding stopped, patient became stable and discharged on the third day of admission and followed in the general surgery clinic for three months with dramatic gain in weight and improvement of her chronic upper abdominal pain and vomiting. Subsequent computed tomography, upper endoscopy with endoscopic ultrasound showed complete regression of the pseudo cyst. (figure 6)

DISCUSSION:

A pancreatic pseudocyst (cystic lesion that lacks epithelial lining) occurs from fluid collection arising within or around the pancreas.⁵ Pancreatic pseudo cyst develops in 5% to 15% of cases of acute pancreatitis and in 20% to 40% of cases of chronic pancreatitis.¹ Arterial pseudo aneurysms are not uncommon with acute or chronic pancreatitis, more often with chronic pancreatitis, especially if pseudocysts are present.³

The erosion of vessels by pseudo cyst is the main cause of hemorrhagic pseudo cyst. The splenic artery is affected in half of the cases, whereas the gastro duodenal and pancreatico-duodenal arteries are less common source of bleeding. A pancreatic pseudo cyst may also involve adjacent organs such as the duodenum and colon by contiguity and may extend as far as the groin and mediastinum.⁷ Gastric wall involvement has also been reported. Zahlan et al. reported a case in which a pseudo cyst of the pancreatic tail ruptured into the wall of the stomach and mimicked a non-bleeding gastric tumor.⁸ The clinical presentation of patients with a splenic artery pseudo aneurysm ranges from asymptomatic to acute hemodynamic collapse secondary to massive bleeding. Rupture into a pseudo cyst typically causes sudden-onset abdominal pain because the bleeding is confined to an enclosed space, which typically leads to expansion of the pseudo cyst. In cases of sudden pain relief, rupture of the pseudo cyst following its expansion after being filled with blood, should be suspected. These cases should be managed immediately as patients might be bleeding internally.⁹

Prompt diagnosis is a challenge because of the rarity of these lesions. Diagnostic techniques currently in use include CT scans, color-duplex ultrasound scans and angiography. The contrast medium used in CT scans enhances the lumen and can aid in the detection of smaller pseudo aneurysms. Ultrasound offers several benefits, including lower costs and no need for contrast material. Angiography, however, remains the gold standard and the procedure of choice for imaging pseudoaneurysms.¹⁰

Therapeutic options include angiographic embolization, and surgical ligation of the pseudo aneurysm with or without pancreatic resection. Some authors have touted the surgical options as better, due to the fact that embolization fails to address the underlying disease (diseased pancreas). They have also stated that subsequent surgery is usually indicated. However, multiple studies have documented the efficacy of angiographic embolization in the management of the bleeding pseudoaneurysms related to pancreatitis.¹¹ Our patient was fortunate as she was promptly diagnosed and successfully treated with angiographic micro coil embolization, though most of these cases die without proper diagnosis.

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